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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,756

12/15/2005

Takatoshi Tsujimura

JP920010371US1

4741

32074

7590

01/07/2009

INTERNATIONAL BUSINESS MACHINES CORPORATION

DEPT. 18G

BLDG. 300-482

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HOPEWELL JUNCTION, NY 12533

EXAMINER

ARENA, ANDREW OWENS

ART UNIT

PAPER NUMBER

2811

MAIL DATE

DELIVERY MODE

01/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,756	Applicant(s) TSUJIMURA ET AL.	
	Examiner Andrew O. Arena	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-7, 9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7 and 9-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In view of the appeal brief filed on 10/06/2008, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Lynne A. Gurley/

Supervisory Patent Examiner, Art Unit 2811.

Response to Arguments

The arguments filed 10/6/2008 regarding claims 1-3 have been fully considered but they are not persuasive since wall 30 is on the sides of function layer 50.

The arguments filed 10/6/2008 regarding claims 5-10 have been fully and are persuasive; those rejections are withdrawn. However, upon further consideration, new grounds of rejection are made in view of newly found reference Akai (JP 2001-210469).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 7 recites "introducing, along the trench pattern...a second function layer" which does not seem to have support in the application as originally filed. The claimed method is shown in Fig 3 and includes a function layer 16 which the specification describes may have multiple layers (pg 15, first ¶) but which is already formed before the trench pattern (specification pg 21 last two ¶). Nowhere in the relevant portions describing the method (pg 21-23) is a second active layer formed after the trench.

Claim Rejections - 35 USC § 102

Statute 35 U.S.C. § 102 is the basis for anticipation rejections made herein:

Claims 1-3 are rejected under 35 U.S.C. § 102(e) as anticipated by Yu.

RE claim 1, Yu discloses an organic light emitting diode device (col 1 ln 11-14), comprising (e.g., Fig 1E):

a substrate (10; col 4 ln 46);

a first electrode (20; col 4 ln 47) formed on the substrate;

an organic electroluminescent function layer (50, 56, 58; col 5 ln 5 & ln 20-24) formed on the substrate;

a trench wall pattern (30; col 4 ln 47) formed adjacently to the function layer; and

a second electrode layer (60; col 5 ln 25) formed on the function layer and the trench wall pattern,

wherein a doping concentration in the function layer (56, 58) under (not above) a wall (30 between 56 and 58) forming the trench pattern is lower than in other portions of the function layer (50 is doped less than 56 and 58, col 5 ln 1-24).

RE claim 2, Yu discloses the function layer (50, 56, 58) contains one of polymer and oligomer, each having an amine derivative structure (col 8 lns 11, 16 & 36).

RE claim 3, Yu discloses different types of dopant are contained in areas of the function layer (col 5 ln 5 & ln 20-24), the areas (50, 56, 58) being adjacent to each other while being spaced by a wall (30) of the trench pattern.

Claim Rejections - 35 USC § 103

Statute 35 U.S.C. § 103(a) is the basis for obviousness rejections made herein:

Claims 5-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being obvious in view of Akai (JP 2001-210469) and Yu.

Rejections refer to the English-Langue machine translation transmitted herewith.

RE claim 5, Akai discloses a method for manufacturing an organic light emitting diode device (¶8), the method (¶30) comprising the steps of:

forming (Drawing 1, ¶31, ¶35) a first electrode (102) on a substrate (101);

forming (Drawing 2) an organic electroluminescent function layer (106, ¶36) on the electrode;

forming (Drawing 3-5) a trench pattern (111 in ¶55, which began as 110 in ¶42) on said organic electroluminescent function layer; and

forming (Drawing 6) a second electrode layer (112, ¶56) on the function layer and the trench pattern.

Akai differs from the claimed invention only in not disclosing performing doping of the function layer.

Akai's above-cited method creates a monochrome display (¶29, ¶59). Akai also contemplates a full color display (¶38) but does not give manufacturing details.

Yu is analogously directed to a method for manufacturing an organic light emitting diode device displaying full-color images (col 1 ln 10-13). Yu discloses forming an organic electroluminescent function layer (50) including a trench pattern (30) on a first electrode (20) on a substrate (10) and further discloses the step of doping (Fig 1C)

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the function layer by supplying a dopant solution (52, 54) along the trench pattern (col 5 lns 5, 12-16 & 20-24). Yu discloses several advantages (col 5 ln 65 - col 6 ln 65).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made that the method of Akai further include the step of performing doping for the function layer by supplying a dopant solution along the trench pattern; at least to use a known suitable method of achieving a full-color display.

RE claim 6, Akai discloses wherein the step of forming a trench pattern includes the steps of: forming a photoresist layer on the function layer; and patterning the photoresist layer to form the trench pattern (¶23, ¶47).

RE claim 7, insofar as this claim can be understood in view of the support provided by the instant disclosure, Akai discloses a second function layer (104 or 105) having a composition different from a composition of the function layer (¶36), the second function layer being “along the trench pattern” in the completed device.

RE claim 9, Yu discloses the step of performing doping for the function layer by supplying a dopant solution includes the steps of:

supplying the dopant solution along the trench pattern (col 5 ln 12-16); and
dispersing the dopant into the function layer (Fig 1C-1D).

Yu differs from the claimed invention only in not explicitly disclosing the manner by which said dispersing is effected.

However, heating is one of the most well known methods of dispersing, or enhancing the dispersion of, dopants, in the art.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made that said dispersing included dispersing by heating the function layer; at least to facilitate the uniform incorporation therein of the dopants.

RE claim 10, Yu discloses wherein the step of performing doping includes the step of supplying different types of dopant into areas of the function layer, the areas being spaced by a wall of the trench pattern (col 5 lns 5, 12-16 & 20-24).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is 571-272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on 571- 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. For more info about PAIR, see <http://pair-direct.uspto.gov>. For questions PAIR access, contact the Electronic Business Center at 866-217-9197 (toll-free). For assistance from a USPTO Customer Service Rep or access to the automated info system, call 800-786-9199 or 571-272-1000.

/Andrew O. Arena/
Examiner, Art Unit 2811
5 January 2009

/Lynne A. Gurley/
Supervisory Patent Examiner, Art
Unit 2811